

1 Pollution Control Agency

2

3 Adopted Permanent Rules Relating to Air Quality Performance Test

4 Methods and Requirements

5

6 Rules as Adopted

7

GENERAL PROVISIONS

8 7005.0100 DEFINITIONS.

9

[For text of subps 1 to 10d, see M.R.]

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Subp. 11. **Equivalent method.** "Equivalent method" means a

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method of sampling and analyzing for an air pollutant which has

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been demonstrated to the commissioner's satisfaction to have

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under specified conditions a consistent and quantitatively known

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relationship to the reference methods in Code of Federal

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Regulations, title 40, part 60, appendix A, as amended; part 61,

16

appendix B, as amended; and part 51, appendix M, as amended.

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[For text of subps 11a to 30, see M.R.]

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Subp. 30a. **PM-10.** "PM-10" means finely divided solid or

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liquid material, with an aerodynamic diameter less than or equal

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to a nominal ten micrometers emitted to the ambient air as

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measured by an applicable reference method, or an equivalent or

22

alternative method.

23

[For text of subps 31 to 35b, see M.R.]

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Subp. 35c. **Reference method; Method.** "Reference method"

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or "Method" means the procedures for performance tests in Code

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of Federal Regulations, title 40, part 60, appendix A, as

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amended; part 61, appendix B, as amended; and part 51, appendix

28

M, as amended.

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[For text of subps 35d to 42a, see M.R.]

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Subp. 42b. **State air pollution control rules.** "State air

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pollution control rules" means chapters 7005, 7007, 7009, 7011,

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7017, 7019, and 7028, and parts ~~7005-0010~~ 7023.0100 to 7005-3060

33

and ~~7017-2000 to 7017-2060~~ 7023.0120.

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[For text of subps 42c and 45, see M.R.]

35 7005.0110 ABBREVIATIONS.



1 As used in the state air pollution control rules, the
2 following abbreviations have the meanings given them:

3 [For text of items A to EE, see M.R.]

4 FF. μg , microgram (10^{-6} gram);

5 GG. VOC, volatile organic compound;

6 HH. EPA, United States Environmental Protection
7 Agency.

8 7017.1000 CONTINUOUS MONITORING.

9 [For text of subps 1 to 8, see M.R.]

10 Subp. 9. **Monitoring data.** Owners or operators of all
11 continuous monitoring systems for measurement of opacity shall
12 reduce all data to six-minute averages except that a one minute
13 averaging period as described in part ~~7017.2000~~
14 7017.2060, subpart-7 subparts 5 and 6, item-B shall be used in
15 the event an applicable standard of performance for opacity
16 allows an excursion above the standard for a specified number of
17 minutes in a one-hour period. Opacity averages shall be
18 calculated from all equally spaced consecutive 15 second (or
19 shorter) data points in the applicable averaging period. For
20 systems other than opacity, the data shall be reduced to one
21 hour averages, which shall be computed from four or more data
22 points equally spaced over each one hour period.

23 Data recorded during periods of system breakdowns, repairs,
24 calibration checks, and zero and span adjustments shall not be
25 included in the data averages computed under this subpart. An
26 arithmetic or integrated average of all data may be used. The
27 data output of all continuous monitoring systems may be recorded
28 in reduced or nonreduced form (e.g. ppm pollutant and percent O₂
29 or lb of pollutant/million Btu). All excess emissions shall be
30 converted into units of the standard using the conversion
31 procedures specified in the applicable regulation. After
32 conversion into units of the standard, the data may be rounded
33 to the same number of significant digits used in the regulation
34 to specify the applicable standard (e.g. rounded to the nearest
35 one percent opacity).

1 [For text of subp 10, see M.R.]

2 7011.0120 OPACITY STANDARD ADJUSTMENT.

3 Subpart 1. Application for permit modification. An owner
4 or operator of an emission facility may file an application for
5 a permit modification under parts 7005.0200 to 7005.0280 for
6 adjustment of the opacity standard applicable to an emissions
7 unit. In addition to the items required under parts 7005.0200
8 to 7005.0280, the application must contain data that
9 demonstrates that:

10 A. based on tests conducted under parts 7017.1000 to
11 7017.2060, the emissions unit is in compliance with the
12 applicable standard of performance for particulate matter and
13 all other standards of performance, except the opacity standard;

14 [For text of items B and C, see M.R.]

15 [For text of subps 2 and 3, see M.R.]

16 ~~STANDARDS-OF-PERFORMANCE-FOR~~ SULFURIC ACID PLANTS

17 7011.1630 EXCEPTIONS.

18 Shutdowns and breakdowns of control equipment at any
19 sulfuric acid production unit shall be governed by the
20 provisions of part 7019.1000.

21 7017.1000 CONTINUOUS MONITORING.

22 [For text of subps 1 to 8, see M.R.]

23 Subp. 9. Monitoring data. Owners or operators of all
24 continuous monitoring systems for measurement of opacity shall
25 reduce all data to six-minute averages except that a one-minute
26 averaging period as described in part 7017.2060, subpart 6,
27 shall be used in the event an applicable standard of performance
28 for opacity allows an excursion above the standard for a
29 specified number of minutes in a one-hour period. Opacity
30 averages shall be calculated from all equally spaced consecutive
31 15 second (or shorter) data points in the applicable averaging
32 period. For systems other than opacity, the data shall be
33 reduced to one hour averages, which shall be computed from four
34 or more data points equally spaced over each one hour period.

1 Data recorded during periods of system breakdowns, repairs,
2 calibration checks, and zero and span adjustments shall not be
3 included in the data averages computed under this subpart. An
4 arithmetic or integrated average of all data may be used. The
5 data output of all continuous monitoring systems may be recorded
6 in reduced or nonreduced form (e.g. ppm pollutant and percent O₂
7 or lb of pollutant/million Btu). All excess emissions shall be
8 converted into units of the standard using the conversion
9 procedures specified in the applicable regulation. After
10 conversion into units of the standard, the data may be rounded
11 to the same number of significant digits used in the regulation
12 to specify the applicable standard (e.g. rounded to the nearest
13 one percent opacity).

14 [For text of subp 10, see M.R.]

15 7019.3010 CALCULATION OF ACTUAL EMISSIONS FOR EMISSION INVENTORY.

16 Subpart 1. **Method.**

17 A. Except as provided in item B, all calculations of
18 actual emissions required under part 7019.3000 shall be based on
19 the operating data supplied in the emission inventory,
20 multiplied by an emission factor. The emission factor used in
21 this calculation shall be an EPA emission factor or, where no
22 EPA emission factor is available, an emission factor generated
23 by the agency. An emission factor generated by the agency shall
24 be calculated using engineering methods consistent with the
25 methods used by the EPA to calculate EPA emission factors.
26 Control equipment efficiency shall be based on the average of
27 the range of EPA efficiency factors or shall be based on the
28 efficiency verified by a performance test conducted according to
29 parts ~~7017.2000~~ 7017.2001 to 7017.2060, provided the performance
30 test took place in the year for which emissions are being
31 calculated.

32 [For text of item B, see M.R.]

33 [For text of subp 2, see M.R.]

34 Subp. 3. **Stack test data.** Emission factors from stack
35 tests may be used for the calculation of emissions, provided

1 that the following conditions are met:

2 A. all the requirements of parts ~~7017.2000~~ 7017.2001
3 to 7017.2060, all other applicable state and federal laws, and
4 all applicable air emission permit conditions relating to stack
5 testing have been complied with; and

6 [For text of item B, see M.R.]

7 Subp. 4. **Volatile organic compound (VOC) material**
8 **balance.** A material balance method may be used to calculate VOC
9 emissions. A person using material balance to calculate VOC
10 emissions shall determine the total VOC emissions (E) as follows:

11
$$E = (a - b - c) * (1 - d)$$

12 where:

13 a = the amount of VOC entering the process. A signed
14 statement from the supplier or the material safety data sheet
15 must be submitted stating the maximum amount of VOC in any
16 material that was used in the process.

17 b = the amount of VOC incorporated permanently into the
18 product. This includes VOC's chemically transformed in
19 production. It does not include latent VOC remaining in the
20 product that will at some time be released to the atmosphere.
21 An explanation of this calculation must also be submitted.

22 c = the amount of VOC, if any, leaving the process as
23 waste, or otherwise not incorporated into the product and not
24 emitted to the air.

25 d = the overall efficiency, or the product of capture
26 efficiency and control efficiency, of any device used to capture
27 and/or control VOC emissions, expressed as a decimal fraction of
28 1.00. This overall efficiency shall be based on the average of
29 the range of EPA efficiency factors, or shall be based on the
30 overall efficiency verified by a performance test conducted
31 according to parts ~~7017.2000~~ 7017.2001 to 7017.2060, provided
32 that the performance test took place in the year for which
33 emissions are being calculated.

34 [For text of subps 5 and 6, see M.R.]

35 7011.0535 PERFORMANCE TEST PROCEDURES.

1 Subpart 1. In general. Performance tests shall be
 2 conducted according to the requirements of this part and parts
 3 ~~7017-2000~~ 7017.2001 to 7017.2060.

4 Subp. 2. Method 1. The sampling site, as selected by
 5 Method 1, shall be the same for each pollutant during a
 6 performance test.

7 Subp. 3. Method 5. For Method 5, the sampling time for
 8 each run shall be at least 60 minutes and the minimum sampling
 9 volume shall be 0.85 dscm (30 dscf) except that smaller sampling
 10 times or volumes, when necessitated by process variables or
 11 other factors, may be approved by the agency. The probe and
 12 filter holder heating systems in the sampling train shall be set
 13 to provide a gas temperature between 120 degrees Celsius and 160
 14 degrees Celsius (250 degrees Fahrenheit and 320 degrees
 15 Fahrenheit).

16 Subp. 4. Methods 6 and 7. For Methods 6 and 7, the
 17 sampling point in the duct shall be at the center of the cross
 18 section or at a point no closer to the walls than 1 m (3.28
 19 feet). For Method 6 the sample shall be extracted at a rate
 20 proportional to the gas velocity at the sampling point.

21 Subp. 5. Method 6. For Method 6, the minimum sampling
 22 time shall be 20 minutes and the minimum sampling volume 0.02
 23 dscm (0.71 dscf) for each sample. The arithmetic mean of two
 24 samples shall constitute one run. Samples shall be taken at
 25 approximately 30-minute intervals.

26 Subp. 6. Method 7. For Method 7, each run shall consist
 27 of at least four grab samples taken at approximately 15-minute
 28 intervals. The arithmetic mean of the samples shall constitute
 29 the run value.

30 Subp. 7. Nanograms. For each performance test, the
 31 emissions expressed in nanograms/joule (lb/million Btu) shall be
 32 determined by the following procedure:

33
$$E = CF \left(\frac{20.90}{20.9 - \%O_2} \right)$$

 34
 35 where:
 36

37 [For text of items A to G, see M.R.]

1 Subp. 8. Alternate method. When the emission factor
 2 cannot be calculated by means of the method outlined in subpart
 3 7, the emission factors for all pollutants for all new and
 4 existing indirect heating equipment expressed in nanograms/joule
 5 (lb./million Btu) shall be determined by the following procedure:

$$6 \quad E = \frac{E_t}{Z}$$

7
 8
 9 where:

10 E = pollutant emissions, in nanograms/joule (lb./million
 11 Btu);

12 E_t = pollutant emission rate, in nanograms/hr. (lb./hr),
 13 determined by Method 5; and

14 z = actual heat input, in joules/hr., (million Btu/hr).

15 Subp. 9. Operation of indirect heating equipment. The
 16 indirect heating equipment shall be operated during the
 17 performance test at 90 percent or more of the rated heat input,
 18 or at 100 percent of peak operating load if an owner or operator
 19 intends to achieve compliance by derating.

20 7011.0725 PERFORMANCE TEST PROCEDURES.

21 Subpart 1. In general. Performance tests shall be
 22 conducted according to the requirements of this part and parts
 23 ~~7017.2000~~ 7017.2001 to 7017.2060.

24 Subp. 2. Special procedures. In the event that emissions
 25 from any industrial process equipment contain organic vapors
 26 which condense at standard conditions of temperature and
 27 pressure, the following changes in Method 5 for determining
 28 particulate emissions shall be made:

29 [For text of items A and B, see M.R.]

30 7011.0115 PERFORMANCE TESTS.

31 Unless another method is approved by the agency, any person
 32 required to submit performance tests for emission facilities for
 33 which parts ~~7005.1100~~ 7011.0100 to ~~7005.1130~~ 7011.0115 are
 34 applicable shall utilize Method 9 for visual determination of
 35 opacity.

36 Performance tests shall be conducted according to the

1 requirements of this part and parts ~~7017-2000~~ 7017.2001 to
2 7017.2060.

3 7011.1625 PERFORMANCE TEST PROCEDURES.

4 Subpart 1. In general. Performance tests shall be
5 conducted according to the requirements of this part and parts
6 ~~7017-2000~~ 7017.2001 to 7017.2060.

7 Subp. 2. Sampling time and volume. In testing for sulfur
8 dioxide and acid mist, the sampling time for each run shall be
9 at least 60 minutes and the minimum sample volume shall be 40.6
10 dscf (1.15 dscm) except that smaller sampling times or sample
11 volumes, when necessitated by process variables or other
12 factors, may be approved by the agency.

13 Subp. 3. Acid production rate. Acid production rate,
14 expressed in tons per hour of 100 percent H₂SO₄, shall be
15 determined during each testing period by a suitable method
16 approved by the agency. The agency may require the production
17 rate to be confirmed by a material balance over the production
18 system.

19 Subp. 4. Acid mist and sulfur dioxide emissions. Unless
20 the commissioner approves another method, acid mist and sulfur
21 dioxide emissions, expressed in pounds per ton (kg/metric ton)
22 of 100 percent H₂ SO₄, shall be determined by dividing the
23 emission rate in lb/hr (kg/hr) by the acid production rate. The
24 emission rate shall be determined by the equation, $Q_s \times c =$
25 lb/hr (kg/hr), where Q_s = volumetric flow rate of the effluent
26 in dscf/hr (dscm/hr) as determined in accordance with part
27 ~~7005-1390~~ 7011.1620, item B, and c = acid mist and sulfur
28 dioxide concentrations in lb/dscf (kg/dscm) as determined in
29 accordance with part ~~7005-1390~~ 7011.1620, item D.

30 7011.1725 PERFORMANCE TEST PROCEDURES.

31 Subpart 1. In general. Performance tests shall be
32 conducted according to the requirements of this part and parts
33 ~~7017-2000~~ 7017.2001 to 7017.2060.

34 Subp. 2. Special procedures. For Method 7, the same site
35 shall be selected according to Method 1 and the sampling point

1 shall be the centroid of the stack or duct or at a point no
2 closer to the walls than 1 meter (3.28 feet). Each run shall
3 consist of at least four grab samples taken at approximately
4 15-minute intervals. The arithmetic mean of the samples shall
5 constitute the run value. A velocity traverse shall be
6 performed once per run.

7 Acid production rate, expressed in metric tons per hour of
8 100 percent nitric acid, shall be determined during each testing
9 period by suitable methods and shall be confirmed by a material
10 balance over the production system.

11 For each run, nitrogen oxides, expressed in lb/ton of 100
12 percent nitric acid (kg/metric ton), shall be determined by
13 dividing the emission rate in lb/hr (kg/hr) by the acid
14 production rate. The emission rate shall be determined by the
15 equation:

$$16 \quad Q_S \times c = \text{lb/hr (kg/hr)}$$

17 where Q_S = volumetric flow rate of the effluent in dscf/hr
18 (dscm/hr), as determined in accordance with part ~~7005.1490~~
19 7011.1720, item B, and c = NO_2 concentration in lb/dscf
20 (kg/dscm), as determined in accordance with part ~~7005.1490~~
21 7011.1720, item D.

22 7011.0825 PERFORMANCE TEST PROCEDURES.

23 Subpart 1. In general. Performance tests shall be
24 conducted according to the requirements of this part and parts
25 ~~7017.2000~~ 7017.2001 to 7017.2060.

26 Subp. 2. Special procedures. In testing for the
27 concentration of particulate matter and the associated moisture
28 content, the minimum sampling time and minimum sample volume for
29 each run, except when other times and volumes are approved by
30 the agency, shall be as follows: 60 minutes and 30 dscf (0.85
31 dscm) for the kiln, and 60 minutes and 40.6 dscf (1.15 dscm) for
32 the clinker cooler.

33 Total kiln feed rate (except fuels) expressed in tons per
34 hour on a dry basis, shall be determined during each testing
35 period by a method approved by the agency, and shall be

1 confirmed by a material balance over the production system.

2 For each run, particulate matter emissions, expressed in
3 pounds per ton of kiln feed, shall be determined by dividing the
4 emission rate in pounds per hour by the kiln feed rate. The
5 emission rate shall be determined by the equation, $lb/hr = Q_s \times$
6 c , where Q_s = volumetric flow rate of the total effluent in
7 dscf/hr as determined in accordance with part ~~7005-1940~~
8 7011.0820, item B, and c = particulate concentration in lb/dscf
9 as determined in accordance with part ~~7005-1940~~ 7011.0820, item
10 D.

11 7011.0920 PERFORMANCE TEST PROCEDURES.

12 Subpart 1. In general. Performance tests shall be
13 conducted according to the requirements of this part and parts
14 ~~7017-2000~~ 7017.2001 to 7017.2060.

15 Subp. 2. Special procedures. For Method 5, the sampling
16 time for each run shall be at least 60 minutes and the sampling
17 rate shall be at least 0.9 dscm/hr (0.53 dscf/min) except that
18 shorter sampling times, when necessitated by process variables
19 or other factors, may be approved by the agency.

20 7011.1430 PERFORMANCE TEST PROCEDURES.

21 Subpart 1. In general. Performance tests shall be
22 conducted according to the requirements of this part and parts
23 ~~7017-2000~~ 7017.2001 to 7017.2060.

24 Subp. 2. Sampling time. For Method 5, the sampling time
25 for each run shall be at least 60 minutes and the sampling rate
26 shall be at least 0.015 dscm (0.53 dscf/min), except that
27 shorter sampling times may be approved by the agency when
28 process variable or other factors preclude sampling for at least
29 60 minutes.

30 Subp. 3. Extraction rate. For Method 10, the sample shall
31 be extracted at a rate proportional to the gas velocity at a
32 sampling point near the centroid of the duct. The sampling time
33 shall not be less than 60 minutes.

34 Subp. 4. Introduction of gases into sampling train. For
35 Method 11, when refinery fuel gas lines are operating at

1 pressures substantially above atmospheric, the gases sampled
 2 must be introduced into the sampling train at approximately
 3 atmospheric pressure. This may be accomplished with a flow
 4 control valve. If the line pressure is high enough to operate
 5 the sampling train without a vacuum pump, the pump may be
 6 eliminated from the sampling train. The sample shall be drawn
 7 from a point near the centroid of the fuel gas line. The
 8 minimum sampling time shall be ten minutes and the minimum
 9 sampling volume 0.01 dscm (0.35 dscf) for each sample. The
 10 arithmetic average of two samples shall constitute one run.
 11 Samples shall be taken at approximately one-hour intervals. For
 12 most fuel gases, sample times exceeding 20 minutes may result in
 13 depletion of the collecting solution, although fuel gases
 14 containing low concentrations of hydrogen sulfide may
 15 necessitate sampling for longer periods of time.

16 Subp. 5. Sampling to determine SO₂ concentration. The
 17 sampling site for determining SO₂ concentration by Method 6
 18 shall be the same as for determining volumetric flow rate by
 19 Method 2. The sampling point in the duct for determining SO₂
 20 concentration by Method 6 shall be at the centroid of the cross
 21 section if the cross sectional area is less than 5 m² (54 ft²)
 22 or at a point no closer to the walls than 1 meter (39 inches) if
 23 the cross sectional area is 5 m² or more and the centroid is
 24 more than one meter from the wall. The sample shall be
 25 extracted at a rate proportional to the gas velocity at the
 26 sampling point. The minimum sampling time shall be ten minutes
 27 and the minimum sampling volume 0.01 dscm (0.35 dscf) for each
 28 sample. The arithmetic average of two samples shall constitute
 29 one run. Samples shall be taken at approximately one-hour
 30 intervals.

31 Subp. 6. Coke burn-off rate. Coke burn-off rate shall be
 32 determined by the following formula:

$$33 R_C = 0.2982 Q_{re} (\%CO_2 + \%CO) + 2.088 Q_{ra} - 0.0994 Q_{re} \\ 34 \quad \quad \quad (\%CO/2 + \%CO_2 + \%O_2) \text{ (metric units)}$$

$$35 \\ 36 R_C = 0.0186 Q_{re} (\%CO_2 + \%CO) + 0.1303 Q_{ra} - 0.0062 Q_{re} \\ 37 \quad \quad \quad (\%CO/2 + \%CO_2 + \%O_2) \text{ (English units)}$$

38 \\ 39 R_C = coke burn-off rate, kg/hr (English units lb/hr).

1 0.2982 = metric units material balance factor divided by
2 100, kg-min/hr-m³;

3 0.0186 = English units material balance factor divided by
4 100, lb-min/hr-ft³;

5 Q_{re} = fluid catalytic cracking unit catalyst regenerator
6 exhaust gas flow rate before entering the emission control
7 system, as determined by Method 2, dscm/min (English units:
8 dscf/min);

9 %CO₂ = percent carbon dioxide by volume, dry basis, as
10 determined by Method 3;

11 %CO = percent carbon monoxide by volume, dry basis, as
12 determined by Method 3;

13 %O₂ = percent oxygen by volume, dry basis, as determined by
14 Method 3;

15 2.088 = metric units material balance factor divided by
16 100, kg-min/hr-m³;

17 0.1303 = English units material balance factor divided by
18 100, lb-min/hr-ft³;

19 Q_{ra} = air rate to fluid catalytic cracking unit catalyst
20 regenerator, as determined from fluid catalytic cracking unit
21 control room instrumentation, dscm/min (English units:
22 dscf/min);

23 0.0994 = metric units material balance factor divided by
24 100, kg-min/hr-m³;

25 0.0062 = English units material balance factor divided by
26 100, lb-min/hr-ft³.

27 **Subp. 7. Particulate emissions.** Particulate emissions
28 shall be determined by the following equation:

29 $R_e = (60 \times 10^{-6}) Q_{rv} C_x$ (metric units); or

30 $R_e = (8.57 \times 10^{-3}) Q_{rv} C_s$ (English units)

31 where:

32 R_e = particulate emission rate, kg/hr (English units:
33 lb-hr);

34 60×10^{-6} = metric units conversion factor, min-kg/hr-gr;

35 8.57×10^{-3} = English units conversion factor, min-lb/hr.gr;

36 Q_{rv} = volumetric flow rate of gases discharged into the

1 atmosphere from the fluid catalytic cracking unit catalyst
 2 regenerator following the emission control system, as determined
 3 by Method 2, dscm/min (English units: dscf/min);

4 C_s = particulate emission concentration discharged in the
 5 atmosphere, as determined by Method 5, mg/dscm (English units:
 6 gr/dscf).

7 Subp. 8. **Coke burn-off.** For each run, emissions expressed
 8 in kg/1000 kg (lb/1000 lb) of coke burn-off in the catalyst
 9 regenerator shall be determined by the following equation:

10
$$R_s = 1000 \frac{R_e}{R_c} \text{ (Metric or English Units)}$$

11 where:

12 R_s = particulate emission rate, kg/1000 kg (lb/1000 lb) of
 13 coke burn-off in the fluid catalytic cracking unit catalyst
 14 regenerator;

15 1000 = conversion factor, kg to 1000 kg (lb to 1000 lb);

16 R_e = particulate emission rate, kg/hr (lb/hr);

17 R_c = coke burn-off rate, kg/hr (lb/hr).

18 Subp. 9. **Rate of particulate matter emissions permitted.**

19 In those instances in which auxiliary liquid or solid fossil
 20 fuels are burned in an incinerator-waste heat boiler, the rate
 21 of particulate matter emissions permitted must be determined.

22 Auxiliary fuel heat input, expressed in millions of cal/hr
 23 (English units: millions of Btu/hr) shall be calculated for

24 each run by fuel flow rate measurement and analysis of the
 25 liquid or solid auxiliary fossil fuels. For each run, the rate
 26 of particulate emissions permitted shall be calculated from the
 27 following equation:

30	New Affected Facilities	Existing Affected Facilities	
31			
32	$R_a = 1.0 + \frac{0.18 H}{R_c}$	$R_a = 10.0 + \frac{0.72 H}{R_c}$	(Metric Units)
33			
34			
35		or	
36	$R_a = 1.0 + \frac{0.10 H}{R_c}$	$R_a = 10.0 + \frac{0.4 H}{R_c}$	(English Units)
37			
38			
39	where:		

40 R_a = allowable particulate emission rate, kg/1000 kg
 41 (English units: lb/1000 lb) of coke burn-off in the fluid
 42 catalytic cracking unit catalyst regenerator;

1 1.0 = emission standard for new affected facilities, 1.0
 2 kg/1000 kg (English units: 1.0 lb/1000 lb) of coke burn-off in
 3 the fluid catalytic cracking unit catalyst regenerator;

4 10.0 = emission standard for existing affected facilities;

5 0.18 = metric units maximum allowable incremental rate of
 6 particulate emissions for new affected facilities gm/million
 7 cal;

8 0.10 = English units maximum allowable incremental rate of
 9 particulate emissions for new affected facilities, lb/million
 10 Btu;

11 0.72 = metric units maximum allowable incremental rate of
 12 particulate emissions for existing affected facilities
 13 gm/million cal;

14 0.4 = English units maximum allowable incremental rate of
 15 particulate emissions for existing affected facilities,
 16 lb/million Btu;

17 H = heat input from solid or liquid fossil fuel, million
 18 cal/hr (English units: million Btu/hr);

19 R_C = coke burn-off rate, kg/hr (English units: lb/hr).

20 7011.1815 PERFORMANCE TEST PROCEDURES.

21 ~~Subpart 1. In general. Performance tests shall be~~
 22 ~~conducted according to the requirements of this part and parts~~
 23 ~~7017.2000 to 7017.2060.~~

24 ~~Subp. 2. Special procedures.~~ In testing for the
 25 concentration of particulate matter and the associated moisture
 26 content, the minimum sampling time for each run shall be at
 27 least 60 minutes and the sampling rate shall be at least 0.9
 28 dscm/hr (0.53 dscf/min) except that shorter sampling times, when
 29 necessitated by process variables or other factors, may be
 30 approved by the agency. Particulate sampling shall be conducted
 31 during representative periods of furnace operation, including
 32 charging and tapping.

33 7011.1915 PERFORMANCE TEST PROCEDURES.

34 Subpart 1. In general. Performance tests shall be
 35 conducted according to the requirements of this part and parts

1 ~~7017-2000~~ 7017.2001 to 7017.2060.

2 Subp. 2. Special procedures. In testing for the
3 concentration of particulate matter and the associated moisture
4 content, the minimum sampling time for each run shall be at
5 least 120 minutes and the sampling rate shall be at least 0.9
6 dscm/hr (0.53 dscf/min) except that shorter sampling times, when
7 necessitated by process variables or other factors, may be
8 approved by the agency. Particulate matter sampling shall be
9 conducted during representative periods of charging and
10 refining, but not during pouring of the heat.

11 7011.2015 PERFORMANCE TEST PROCEDURES.

12 Subpart 1. In general. Performance tests shall be
13 conducted according to the requirements of this part and parts
14 ~~7017-2000~~ 7017.2001 to 7017.2060.

15 Subp. 2. Special procedures. In testing for the
16 concentration of particulate matter and the associated moisture
17 content, the sampling for each run shall continue for an
18 integral number of steel production cycles with total duration
19 of at least 60 minutes. The sampling rate shall be at least 0.9
20 dscm/hr (0.53 dscf/min) except that shorter sampling times, when
21 necessitated by process variables or other factors, may be
22 approved by the agency. A cycle shall start at the beginning of
23 either the scrap preheat or the oxygen blow and shall terminate
24 immediately prior to tapping.

25 7011.1325 PERFORMANCE TEST PROCEDURES.

26 Subpart 1. In general. Performance tests shall be
27 conducted according to the requirements of this part and parts
28 ~~7017-2000~~ 7017.2001 to 7017.2060.

29 Subp. 2. Sampling time for Method 5. For Method 5, the
30 sampling time for each run shall be at least 60 minutes and the
31 sampling rate shall be at least 0.015 dscm/min (0.53 dscf/min),
32 except that shorter sampling times, when necessitated by process
33 variables or other factors, may be approved by the agency.

34 Subp. 3. Dry sludge charging rate. Dry sludge charging
35 rate shall be determined as follows:

1 [For text of items A to C, see M.R.]

2 Subp. 4. Particulate emission rate. Particulate emission
3 rate shall be determined by:

$$4 \quad C_{aw} = C_s Q_s \text{ (metric or English units)}$$

5 where:

6 C_{aw} = Particulate matter mass emissions, mg/hr (English
7 units: lb/hr).

8 C_s = Particulate matter concentration, mg/m³ (English
9 units: lb/dscf).

10 Q_s = Volumetric stack gas flow rate, dscm/hr (English units:
11 dscf/hr). Q_s and c_s shall be determined using methods 2 and 5,
12 respectively.

13 Subp. 5. Compliance with standards. Compliance with part
14 ~~7005-2370~~ 7011.1310 shall be determined as follows:

$$15 \quad C_{ds} = (10^{-3}) \frac{C_{aw}}{S_d} \text{ (Metric Units)}$$

17 or

$$19 \quad C_{ds} = (2000) \frac{C_{aw}}{S_d} \text{ (English Units)}$$

22 where:

23 C_{ds} = particulate emission discharge, g/kg dry sludge
24 (English units: lb/ton dry sludge).

25 10^{-3} = Metric conversion factor, g/mg.

26 2,000 = English conversion factor, lb/ton.

27 7011.9945 PERFORMANCE TEST PROCEDURES.

28 Subpart 1. ~~In general,--Performance tests shall be~~
29 ~~conducted according to the requirements of this part and parts~~
30 ~~7017-2000 to 7017-2060.~~

31 ~~Subp. 2.~~ Notice to commissioner. The commissioner shall
32 be notified in writing at least 30 days prior to an emission
33 test.

34 Subp. ~~3.~~ 2. Sampling. Samples shall be taken over such a
35 period or periods as are necessary to accurately determine the
36 maximum emissions which will occur in any 24-hour period. Where
37 emissions depend upon the relative frequency of operation of
38 different types of processes, operating hours, operating
39 capacities, or other factors, the calculation of maximum

1 24-hour-period emissions shall be based on that combination of
2 factors which is likely to occur during the subject period and
3 which results in the maximum emissions. No changes in the
4 operation shall be made, which would potentially increase
5 emissions above that determined by the most recent source test,
6 until a new emission level has been estimated by calculation and
7 the results reported to the commissioner.

8 Subp. ~~4~~ 3. **Analysis.** All samples shall be analyzed and
9 beryllium emissions shall be determined within 30 days after the
10 source test. All determinations shall be reported to the
11 commissioner by a registered letter dispatched before the close
12 of the next business day following such determination.

13 7011.9954 PERFORMANCE TEST PROCEDURES.

14 Subpart 1. ~~In-general---~~ ~~Performance-tests-shall-be~~
15 ~~conducted-according-to-the-requirements-of-this-part-and-parts~~
16 ~~7017-2000-to-7017-2060.~~

17 Subp. ~~2~~. **Notice to commissioner.** The commissioner shall
18 be notified in writing at least 30 days prior to an emission
19 test.

20 Subp. ~~3~~ 2. **Sampling.** Samples shall be taken over such a
21 period or periods as are necessary to accurately determine the
22 maximum emissions which will occur in a 24-hour period. No
23 changes in the operation shall be made, which would potentially
24 increase emissions above that determined by the most recent
25 source test, until the new emission level has been estimated by
26 calculation and the results reported to the commissioner.

27 Subp. ~~4~~ 3. **Analysis.** All samples shall be analyzed, and
28 mercury emissions shall be determined within 30 days after the
29 source test. Each determination shall be reported to the
30 commissioner by a registered letter dispatched before the close
31 of the next business day following such determination.

32 Subp. ~~5~~ 4. **Cell room emissions.** Cell room emissions at a
33 mercury chlor-alkali plant shall be determined by passing all
34 cell room air in forced gas streams through stacks suitable for
35 testing.

1 Subp. 6- 5. **Substitute for cell room performance tests.**
2 In lieu of performance tests for cell room emissions at a
3 mercury chlor-alkali plant, the owner or operator may elect to
4 carry out design, maintenance, and housekeeping practices
5 approved by the commissioner and assume that emissions from the
6 cell room ventilation system contain 1,300 grams of mercury per
7 day.

8 Subp. 7- 6. **Substitute for sludge incineration and drying**
9 **plant performance tests.** In lieu of performance tests for
10 sludge incineration and drying plants, the owner or operator of
11 such a plant may elect to carry out a sludge sampling program
12 according to Method 105, Method for Determination of Mercury in
13 Wastewater Treatment Plant Sewage Sludges, set forth in appendix
14 B of Code of Federal Regulations, title 40, part 61, and
15 according to the procedures set forth below:

16 [For text of items A to G, see M.R.]

17 7011.0620 PERFORMANCE TEST PROCEDURES.

18 Subpart 1. **In general.** Performance tests shall be
19 conducted according to the requirements of this part and parts
20 ~~7017.2000~~ 7017.2001 to 7017.2060.

21 Subp. 2. **Sampling site.** The sampling site, as selected by
22 Method 1, shall be the same for each pollutant during a
23 performance test.

24 Subp. 3. **Sampling time for Method 5.** For Method 5, the
25 sampling time for each run shall be at least 60 minutes and the
26 minimum sampling volume shall be 0.85 dscm (30 dscf) except that
27 smaller sampling times or volumes, when necessitated by process
28 variables or other factors may be approved by the agency. The
29 probe and filter holder heating systems in the sampling train
30 shall be set to provide a gas temperature between 120 degrees
31 Celsius and 160 degrees Celsius (250 degrees Fahrenheit and 320
32 degrees Fahrenheit).

33 Subp. 4. **Sampling point for Method 6.** For Method 6, the
34 sampling point in the duct shall be at the center of the cross
35 section or at a point no closer to the walls than one meter

1 (3.28 ft.). The sample shall be extracted at a rate
2 proportional to the gas velocity at the sampling point.

3 Subp. 5. **Sampling time for Method 6.** For Method 6, the
4 minimum sampling time shall be 20 minutes and the minimum
5 sampling volume 0.02 dscm (0.71 dscf) for each sample. The
6 arithmetic mean of two samples shall constitute one run.
7 Samples shall be taken at approximately 30-minute intervals.

8 Subp. 6. **Sulfur dioxide emissions.** For each performance
9 test for sulfur dioxide emissions, the emissions expressed in
10 g/million cal (lb/million Btu) shall be determined by the
11 following procedure if the actual heat input is used:

$$12 \qquad \qquad \qquad E = CF \left(\frac{20.90}{20.9 - \%O_2} \right)$$

13
14 where:

15
16 [For text of items A to G, see M.R.]

17 7011.1135 PERFORMANCE TEST PROCEDURES.

18 Subpart 1. **In general.** Performance tests shall be
19 conducted according to the requirements of this part and parts
20 ~~7017-2000~~ 7017.2001 to 7017.2060.

21 Subp. 2. **Special procedures.** For Method 5, the sampling
22 time for each run shall be at least 60 minutes and the minimum
23 sampling volume shall be 0.85 dscm (30 dscf) except that smaller
24 sampling times or volumes, when necessitated by process
25 variables or other factors, shall be approved by the
26 commissioner. The probe and filter holder heating systems in
27 the sampling train shall be set to provide a gas temperature
28 between 100 degrees Celsius and 120 degrees Celsius (212 degrees
29 Fahrenheit and 250 degrees Fahrenheit). Sampling shall not be
30 started until at least 30 minutes after start up and shall be
31 terminated before shutdown procedures commence. The owner or
32 operator shall eliminate cyclonic flow during performance tests.

33 **PERFORMANCE TEST-METHODS-AND-REQUIREMENTS TESTS**

34 ~~7017-2000~~ 7017.2001 APPLICABILITY.

35 Subpart 1. **Applicability.** For the purpose of conducting
36 performance tests as required by a compliance document, federal

1 regulation, or Minnesota rule or statute, parts ~~7017-2000~~
2 7017.2001 to 7017.2060 apply unless more stringent requirements
3 or equivalent procedures are mandated by a compliance document,
4 federal regulation, or Minnesota rule or statute applicable to
5 the emission facility.

6 Subp. 2. **Transition to new rule.** Parts ~~7017-2000~~
7 7017.2001 to 7017.2060 supersede the requirements of Exhibit C,
8 entitled "Performance Test Procedures" as attached to air
9 emission permits issued by the agency prior to September
10 November 1, 1993. For performance tests required by permits
11 issued prior to November 1, 1993, if the commissioner cannot
12 establish worst case operating conditions under part 7017.2025,
13 subpart 2, operating conditions for the performance test shall
14 be defined in the test plan. In this situation, if the
15 performance test demonstrates compliance, then part 7017.2025,
16 subpart 3, item B, applies.

17 7017.2005 DEFINITIONS.

18 Subpart 1. **Scope.** For the purposes of parts ~~7017-2000~~
19 7017.2001 to 7017.2060, the definitions given in part 7005.0100
20 shall apply unless otherwise defined in this part.

21 Subp. 2. **Compliance document.** "Compliance document" means
22 a permit, stipulation agreement, administrative penalty order,
23 administrative order, compliance agreement, schedule of
24 compliance, consent order, consent decree, or variance issued by
25 the agency to control air pollution.

26 Subp. 3. **Federal regulation.** "Federal regulation" means
27 any regulation promulgated by EPA under the Clean Air Act,
28 United States Code, title 42, section 7401, et seq.

29 Subp. ~~3~~ 4. **Performance test.** "Performance test" means
30 the quantification of emissions or determination of the
31 physical, chemical, or aesthetic properties of those emissions
32 from an emissions unit by means of conducting one or more test
33 runs at an emission facility. This includes conducting test
34 runs for a relative accuracy test on a continuous emissions
35 monitoring system.

1 Subp. ~~4~~ 5. **Test plan.** "Test plan" means the document
2 which describes the objectives of a performance test, how the
3 emissions unit will be operated during the performance test, how
4 operating conditions will be monitored and recorded, which test
5 methods will be used, and any other specific requirements of the
6 applicable compliance document, federal regulation, or Minnesota
7 rule or statute.

8 Subp. ~~5~~ 6. **Test run.** "Test run" means the procedure for
9 sampling or analyzing emissions at or before the emission point
10 of an emissions unit over a defined length of time at specified
11 operating conditions.

12 Subp. ~~6~~ 7. **Testing company.** "Testing company" means a
13 corporation, partnership, or sole proprietorship that conducts
14 performance tests as a normal part of its business activities
15 and that is not the owner or operator of the emission facility
16 or a subsidiary, division, or subdivision of the owner or
17 operator of the emission facility.

18 Subd. ~~7~~ 8. **Worst case conditions.** "Worst case conditions"
19 means the mode of operation of an emissions unit, including the
20 air pollution control equipment, that is allowed under the
21 applicable compliance document, federal regulation, or Minnesota
22 rule or statute and which is known, through performance test
23 data or mass balance calculation, to give the highest emission
24 rate for an air pollutant within the allowed range of operating
25 conditions. The type of operating conditions included in this
26 definition shall be limited to the process or operating rate and
27 any operational parameters that are regulated by the applicable
28 compliance document, federal regulation, or Minnesota rule or
29 statute.

30 7017.2010 INCORPORATION OF TEST METHODS BY REFERENCE.

31 For the purpose of parts 7017.2020 to 7017.2060, the
32 documents in items A to C are incorporated by reference. These
33 documents are subject to frequent change.

34 A. Code of Federal Regulations, title 40, part 60,
35 Appendix A, as amended, entitled "Appendix A - Test Methods."

1 B. Code of Federal Regulations, title 40, part 61,
2 Appendix B, as amended, entitled "Appendix B - Test Methods."

3 C. Code of Federal Regulations, title 40, part 51,
4 Appendix M, as amended, entitled "Appendix M to Part 51 -
5 Recommended Test Methods for State Implementation Plans."

6 7017.2015 INCORPORATION OF FEDERAL TESTING REQUIREMENTS BY
7 REFERENCE.

8 Subpart 1. **Applicability.** Subparts 1 to 4 apply to the
9 owner or operator of an emission facility, emissions unit, or
10 stationary source subject to New Source Performance Standards
11 and National Emission Standards for Hazardous Air Pollutants.

12 Subp. 2. **New Source Performance Standards.** The following
13 are adopted and incorporated by reference:

14 A. Code of Federal Regulations, title 40, part 60.8,
15 as amended, entitled "Performance Tests," except that decisions
16 made by the administrator under Code of Federal Regulations,
17 title 40, parts 60.8(b)(2) and 60.8(b)(3), are not delegated to
18 the commissioner and must be made by the administrator.

19 B. Code of Federal Regulations, title 40, part 60.11,
20 as amended, entitled "Compliance with Standards and Maintenance
21 Requirements," except that decisions made under Code of Federal
22 Regulations, title 40, part 60.11(e), are not delegated to the
23 commissioner and must be made by the administrator.

24 Subp. 3. **National Emission Standards for Hazardous Air
25 Pollutants.** The following is adopted and incorporated by
26 reference: Code of Federal Regulations, title 40, part 61.13,
27 as amended, entitled "Emission Tests and Waiver of Emission
28 Tests," except that decisions made by the administrator under
29 Code of Federal Regulations, title 40, part 61.13(h)(1)(ii), are
30 not delegated to the commissioner and must be made by the
31 administrator.

32 Subp. 4. **Document submission.** All requests, reports,
33 applications, submittals, and other communications to the
34 administrator pursuant to subparts 2 and 3 must be submitted to
35 the commissioner.

1 7017.2018 SUBMITTALS.

2 All notifications, applications, or submittals required
3 under parts 7017.2020 to 7017.2060 shall be sent to the
4 Supervisor, Compliance Determination Unit, Compliance and
5 Enforcement Section, Air Quality Division, Minnesota Pollution
6 Control Agency, 520 Lafayette Road, St. Paul, Minnesota
7 55155-3898.

8 7017.2020 PERFORMANCE TESTS GENERAL REQUIREMENTS.

9 Subpart 1. **Testing required.** The owner or operator of an
10 emission facility shall arrange to conduct a performance test to
11 determine the characteristics and amount of emissions of air
12 pollutants from any emission facility at the times required by
13 an applicable compliance document, federal regulation, or
14 Minnesota rule or statute and at additional times if the
15 commissioner requests a performance test in order to:

16 A. evaluate a permit application;

17 B. determine compliance with a compliance document,
18 federal regulation, or Minnesota rule or statute;

19 C. determine compliance subsequent to a performance
20 test that indicated noncompliance or where compliance could not
21 be determined due to errors in following a test method, lack of
22 or inaccurate documentation, or because the requirements of
23 parts ~~7017.2000~~ 7017.2001 to 7017.2060 were not met;

24 D. determine the compliance status of an emission
25 facility following an inspection of the facility by agency staff
26 during which indicators of noncompliance were found;

27 E. determine the compliance status of an emission
28 facility following a modification to the emission facility that
29 the commissioner determines could cause an increase in the
30 amount of emissions of any air pollutant from that facility; or

31 F. determine the relative accuracy of a continuous
32 emissions monitoring system.

33 EPA may request a performance test under this part for the
34 reasons listed in items A to F. When EPA requires a performance
35 test under this subpart, and EPA directly administers the

1 performance test, EPA will make the decisions that the
2 commissioner makes under parts 7017.2001 to 7017.2060 for that
3 performance test.

4 Subp. 2. **Testing company.** The performance test shall be
5 conducted by a testing company unless a compliance document
6 allows the owner or operator to conduct the performance test or
7 to contract with an alternative entity that does not meet the
8 criteria of the definition, or unless the agency, EPA, or any
9 authorized employee or agent of the agency or EPA is conducting
10 the performance test.

11 Subp. 3. **Safety and access.** The owner or operator of the
12 emission facility shall provide a safe working platform and safe
13 access to the platform at the sampling site.

14 Subp. 4. **Verification of test results.** The results of a
15 performance test are not final until a complete report, as
16 defined in part 7017.2035, subpart 3, is submitted and the
17 commissioner gives written verification of the compliance status
18 of the emission facility. Upon verification of the test
19 results, the duration of the compliance status that the
20 performance test determines for the emission facility begins
21 with the date of the performance test.

22 Subp. 5. **Test runs.** Each performance test shall consist
23 of at least three separate test runs using the applicable test
24 method, with the exception of opacity determinations and
25 performance tests conducted for the purpose of completing a
26 relative accuracy test on a continuous emissions monitoring
27 system. One test run shall be required for opacity
28 determinations, ~~and~~. Relative accuracy tests shall be conducted
29 in accordance with the applicable ~~performance specification in~~
30 ~~Code of Federal Regulations, title 40, part 60, Appendix B~~
31 compliance document, federal regulation, or Minnesota rule or
32 statute. However, the commissioner shall require more test runs
33 to be conducted if the applicable compliance document, federal
34 regulation, or Minnesota rule or statute requires additional
35 test runs or determination of emissions at more than one process
36 or operating condition.

1 The arithmetic mean of the test runs is the result of the
2 performance test, with the exception of opacity readings which
3 are subject to part 7017.2060, subparts 5 and 6. In the event
4 that a sample is accidentally lost or conditions occur in which
5 one of three test runs must be discontinued because of forced
6 shutdown, failure of an irreplaceable portion of the sample
7 train, extreme meteorological conditions, or other circumstances
8 beyond the control of the owner or operator and the testing
9 company, compliance may, upon the commissioner's approval, be
10 determined using the arithmetic mean of the two remaining test
11 runs.

12 7017.2025 OPERATIONAL REQUIREMENTS AND LIMITATIONS.

13 Subpart 1. **Scope.** This part specifies criteria that the
14 commissioner will use to determine which operating parameters,
15 if any, will be subject to limitations based upon the mode of
16 operation during a performance test. Operations during periods
17 of start-up, shutdown, and malfunction shall not constitute
18 representative conditions of performance tests unless otherwise
19 specified in an applicable compliance document, federal
20 regulation, or Minnesota rule or statute.

21 Subp. 2. **Operating conditions for performance testing.**
22 The performance test shall be conducted at worst case conditions
23 for each air pollutant that is required to be tested unless:

24 A. the applicable compliance document, federal
25 regulation, or Minnesota rule or statute specifies alternative
26 operating conditions for performance testing;

27 B. the worst case condition is not known or
28 calculable. In this case, worst case conditions shall be
29 assumed to be the maximum achievable process or operating rate
30 of the emissions unit;

31 C. the owner or operator of the emission facility
32 elects to conduct the performance test at conditions that are
33 not worst case conditions; or

34 D. the performance test is conducted solely for the
35 purpose of completing a relative accuracy test on a continuous

1 emission monitoring system, in which case the emissions unit
2 shall be operated at or above 50 percent of rated capacity.

3 Subp. 3. Compliance demonstrated at tested conditions.

4 Upon the commissioner's written notice that the emission
5 facility has demonstrated compliance under the conditions of the
6 performance test, the owner or operator of the emission facility
7 shall operate the affected emissions unit as specified in item
8 A, B, ~~or C~~, or D, unless another performance test is conducted
9 at alternative conditions and the commissioner gives written
10 notification that the performance test demonstrated compliance
11 at those conditions:

12 A. if the owner or operator did not conduct the
13 performance test at worst case conditions as required, or
14 elected to conduct the performance test under alternative
15 conditions under subpart 2, item C, the affected emissions unit
16 shall not be operated at a process rate, operating rate, or
17 regulated operating condition that is closer to the worst case
18 conditions than the actual conditions of the performance test;

19 B. if the owner or operator conducted the performance
20 test under the conditions specified in subpart 2, item A, the
21 owner or operator shall comply with any operational limitations
22 imposed by the applicable compliance document, federal
23 regulation, or Minnesota rule or statute;

24 C. if the owner or operator conducted the performance
25 test at the maximum achievable process or operating rate under
26 subpart 2, item B, the emissions unit may not be operated at a
27 higher process or operating rate than was recorded during the
28 performance test; or

29 D. if the owner or operator conducted the performance
30 test at worst case conditions, the owner or operator shall
31 comply with any applicable compliance document, federal
32 regulation, or Minnesota rule or statute.

33 If the owner or operator conducted the performance test
34 under subpart 2, item D, no operational limitations will be
35 imposed. However, if the performance test was conducted at less
36 than 50 percent of rated capacity, the commissioner will reject

1 the results of the performance test.

2 Subp. 4. Failure to demonstrate compliance. Upon the
3 commissioner's written notice that the emission facility has
4 failed to demonstrate compliance with an applicable emission
5 limit, the owner or operator of the emission facility, unless an
6 alternative schedule is given in an applicable compliance
7 document, federal regulation, or Minnesota rule or statute,
8 shall:

9 A. conduct a retest within 30 days of receipt of the
10 commissioner's written notice;

11 B. submit to the commissioner written notice of
12 testing, submit a test plan for the retest, and schedule a
13 pretest meeting at least 21 days in advance of the date of the
14 retest. The pretest meeting shall be held at least seven
15 working days prior to the date of the retest;

16 C. submit a complete report of the results of the
17 retest to the commissioner according to the requirements of part
18 7017.2035; and

19 D. the owner or operator may receive an extension to
20 the schedule in items A to C if one of the following special
21 circumstances apply:

22 (1) seasonal or temporary shutdown of the
23 affected emissions units;

24 (2) malfunction or breakdown of the affected
25 emissions units;

26 (3) weather conditions that prevent using the
27 applicable test methods or prevent operation of the affected
28 emission units at the required operating conditions; ~~or~~

29 (4) any other conditions beyond the control of
30 the owner or operator that prevent using the applicable test
31 methods or prevent operation of the affected emissions units at
32 the required operating conditions; or

33 (5) any other condition beyond the control of the
34 owner or operator that prevents completion of a retest within
35 the required schedule.

36 Any request for an extension of the time schedule shall be

1 submitted to the commissioner in writing by the owner or
2 operator prior to the date by which retesting is required and.
3 The request shall specify the reason why the extension is
4 needed, include an alternative retest schedule, and include a
5 detailed summary of the measures the owner or operator will take
6 to bring the affected emission unit into compliance. The
7 commissioner shall grant the request for extension if the
8 commissioner finds that one or more of the special conditions in
9 item D apply. If the commissioner grants an extension, the
10 owner or operator shall implement the alternative retest
11 schedule and compliance measures. The compliance plan may also
12 include a detailed summary of additional measures the owner or
13 operator will implement if the owner or operator fails the
14 retest. A requested extension shall not be effective unless the
15 commissioner has given written approval of the extension. The
16 commissioner shall not extend a retest date more than 30 days
17 after the start-up, completion of maintenance, seasonal weather
18 change, or other improvement in conditions occurs under item D,
19 subitems (1) to (4). The commissioner shall not extend a retest
20 date under item D, subitem (5), for more than 30 days.

21 Subp. 5. Failure of retest. If a retest has been
22 conducted under subpart 4 and the commissioner provides written
23 notice to the owner or operator of the emission facility that
24 the retest provides a second demonstration of noncompliance with
25 an applicable emission limit, the owner or operator shall shut
26 down the affected emissions units. The owner or operator may
27 not operate the emissions units unless items A to C apply.

28 A. The owner or operator is able to demonstrate to
29 the commissioner that corrective actions or procedural changes
30 have been made which will be applied consistently and which
31 will, when properly executed, ensure that the emission units
32 will demonstrate compliance at all times with all applicable
33 emission limits and capture, removal, or destruction efficiency
34 requirements.

35 B. The owner or operator has received the
36 commissioner's written acceptance of demonstrating the

1 conditions in item A, ~~and~~. This written acceptance may be given
2 at the same time as the notification of noncompliance if a
3 compliance plan has already been submitted under subpart 4 or
4 otherwise and it satisfies the requirements of item A.

5 C. Upon receipt of the commissioner's approval to
6 operate the affected emissions units, the owner or operator
7 complies with any new operating limits arising from the
8 demonstration in item A.

9 Subp. 6. **Agency tests.** Upon request of the agency or the
10 commissioner, the owner or operator of an emission facility
11 shall allow the agency or EPA, or any authorized employee or
12 agent of the agency or EPA, to enter upon the premises of the
13 owner or operator for the purposes of conducting performance
14 tests. The owner or operator shall provide performance testing
15 facilities that enable the agency or its employees or agents to
16 conduct performance tests, including:

17 A. sampling ports adequate for the applicable test
18 methods;

19 B. safe sampling platforms;

20 C. safe access to sampling platforms; and

21 D. utilities for sampling and testing equipment.

22 The agency or EPA, or authorized employee or agent of the
23 agency or EPA shall provide all other equipment and personnel
24 necessary to conduct the performance test methods.

25 7017.2030 PERFORMANCE TEST PRETEST REQUIREMENTS.

26 Subpart 1. **Notification of testing.** Written notification
27 of the planned test date shall be postmarked or received at
28 least 30 days before the planned test date. The commissioner
29 shall reject the results of a test if less than 30 days' notice
30 was given unless written authorization of a shorter notice was
31 given by the commissioner.

32 Subp. 2. **Submittal and approval of test plan.** The owner
33 or operator of the emission facility shall submit to the
34 commissioner a test plan with or in advance of the test
35 notification required under subpart 1 or in response to the

1 commissioner's request for supplemental permit application
2 information. If the proposed test plan does not contain
3 sufficient or accurate enough detail to ensure that the
4 performance test meets the requirements of the applicable
5 compliance document, federal regulation, or Minnesota rule or
6 statute, the commissioner shall ask for an updated test plan to
7 be submitted or shall write a test plan in place of the
8 submitted document.

9 The commissioner shall give written approval of the test
10 plan when the commissioner determines that it meets the
11 requirements of parts ~~7017.2000~~ 7017.2001 to 7017.2060. Written
12 approval means any signed letter, note, or facsimile
13 transmission which states that a given test plan may be used
14 during a specific performance test. The commissioner shall
15 reject the results of a performance test if it was conducted
16 without written approval of the test plan.

17 Subp. 3. Format and content of test plan. The test plan
18 shall be submitted in the following format and include, as a
19 minimum, the following elements:

20 A. Part I. General information:

- 21 (1) name and address of emission facility;
22 (2) name, title, and telephone number of contact
23 person at emission facility;
24 (3) permit number or name of other applicable
25 compliance document;
26 (4) reason for testing;
27 (5) schematic drawing of stack and sample ports;
28 (6) location of plant; and
29 (7) name, contact person, and telephone number
30 for testing company contracted to conduct the test.

31 B. Part II. Testing requirements:

- 32 (1) list of the pollutants to be tested, the
33 emission limit for each pollutant, and the applicable rule or
34 regulation for each emission limit; and
35 (2) description of procedure for fuel sampling
36 and analysis, where applicable.

1 C. Part III. Operating conditions:

2 (1) list of the process or operating rate and
3 conditions of the process equipment and air pollution control
4 equipment for the test;

5 (2) explanation of why the proposed conditions
6 are considered to be in accordance with part 7017.2025, subpart
7 2, for required testing conditions;

8 (3) list of the range of process or operating
9 rates for each emissions unit; and

10 (4) description of how air pollution control and
11 process equipment will be monitored.

12 D. Part IV. Test methods:

13 (1) list of the methods to be used to determine
14 the emission rate of each pollutant;

15 (2) number of test runs, length of test run, and
16 sampling rate for each method;

17 (3) reference to any compliance document, federal
18 regulation, or Minnesota rule or statute requiring use of
19 specific methods or procedures;

20 (4) summary of reasons for proposing to use any
21 alternative or equivalent method; and

22 (5) for test methods other than reference
23 methods, statement of the detection limit and the degree of
24 accuracy of that method at the expected emission rate and under
25 the conditions of the performance test.

26 E. Part V. CEMS relative accuracy. For performance
27 tests scheduled for the purpose of determining the relative
28 accuracy of a continuous emissions monitoring system, provide:

29 (1) unit basis under which the continuous
30 emissions monitoring system will be certified, for example,
31 pounds per hour or parts per million;

32 (2) span value of the continuous emissions
33 monitor; and

34 (3) identification of recording systems, for
35 example, strip chart recorder or data acquisition system, that
36 will be certified.

1 Subp. 4. **Pretest meeting.** The owner or operator of the
2 emission facility shall contact the supervisor of the compliance
3 determination unit to schedule a pretest meeting to be held at
4 the MPCA office in St. Paul between authorized employees of the
5 agency and the owner or operator of the emission facility, with
6 optional representation by the testing company. The pretest
7 meeting shall be held at least seven working days prior to the
8 performance test date except that a shorter period shall be
9 allowed if the commissioner has approved a test notification of
10 less than 30 days. If the commissioner determines that an
11 in-person meeting is not necessary, the pretest meeting will be
12 conducted by telephone conference call unless the owner or
13 operator of the emission facility requests an in-person
14 meeting. The commissioner will reject a test if the owner or
15 operator of the emission facility refused to participate in a
16 pretest meeting.

17 7017.2035 PERFORMANCE TEST REPORTING REQUIREMENTS.

18 Subpart 1. **Submittal of performance test results.** The
19 owner or operator of the emission facility shall submit a test
20 report and any additional information required by the compliance
21 document, test plan, federal regulation, or Minnesota rule or
22 statute. A report shall be submitted for any performance test
23 that was required pursuant to part 7017.2020, subpart 1, whether
24 or not the test data indicates compliance with the applicable
25 emission limits or operating conditions and whether or not the
26 test was completed according to the approved test plan.

27 Subp. 2. **Submittal schedule.** The performance test report
28 shall be postmarked or received within 45 days following
29 completion of the performance test unless an alternate schedule
30 is given in the applicable compliance document.

31 The owner or operator of the emission facility shall
32 provide to the commissioner a microfiche copy of the performance
33 test report to be postmarked or received within 60 days of the
34 deadline for submittal of the test report. The complete permit
35 file number, complete emission facility name, and exact date of

1 testing shall be provided. A cover letter which certifies that
2 the microfiche is an exact and complete copy of the original
3 test report shall be submitted with the microfiche copy.

4 Subp. 3. Complete report. The report shall include the
5 following elements:

6 A. Cover:

- 7 (1) name and location of the emission facility;
8 (2) identification of emissions unit tested;
9 (3) date of the performance test; and
10 (4) name and address of testing company or agency.

11 B. Certification: signed and dated certification
12 statements in the format required by part 7017.2040.

13 C. Introduction:

- 14 (1) reason for testing, for example, required by
15 permit or notice of violation, including permit number or name
16 of other applicable compliance document;
17 (2) test location, type of process;
18 (3) test dates;
19 (4) pollutants tested;
20 (5) observers' names including industry and
21 agency observers; and
22 (6) any other important background information.

23 D. Summary of results:

- 24 (1) emission results, expressed in the same units
25 as the emission limits;
26 (2) process data, as related to determination of
27 compliance;
28 (3) emission limits and applicable regulations;
29 (4) description of collected samples;
30 (5) visible emissions summary if applicable; and
31 (6) discussion of errors, both real and apparent.

32 E. Operating parameters: readings of discrete data
33 from monitoring instruments must be recorded at least every 15
34 minutes during the test and strip charts from continuous
35 monitors must be included in the test report.

- 36 (1) description of process and air pollution

1 control devices;

2 (2) process and control equipment flow diagram;

3 (3) process data and results, with example

4 calculations; and

5 (4) any specially required operation

6 demonstrations.

7 F. Maintenance: description, including dates, of all
8 maintenance and operational inspections, including major
9 cleaning operations and replacement of functional components of
10 process or control equipment done in the month prior to the test.

11 G. Sampling and analysis procedures:

12 (1) sampling port location and dimensioned cross
13 section, showing all flow disturbances including elbows,
14 dampers, fans, constrictions, and collection equipment;

15 (2) description of sampling point;

16 (3) description of sampling train;

17 (4) brief description of sampling procedures and
18 analytical methods, with discussion of deviations from standard
19 methods, including a statement of source methods used, but not
20 including complete copies of reference methods in the report;
21 and

22 (5) if a method other than a United States EPA
23 reference method was used, statement of the detection limit and
24 the level of accuracy of the method under the conditions of the
25 test and at the concentration of air pollutant that is reported.

26 H. Appendix:

27 (1) complete results, including any fuel
28 analysis, with example calculations, showing equations used and
29 actual results in equation form on same or adjacent pages, using
30 applicable equations shown in the reference method;

31 (2) copies of raw field data;

32 (3) laboratory report, with record of chain of
33 custody;

34 (4) raw production data, signed by plant official
35 who can interpret the data and can be held accountable for the
36 data;

- 1 (5) test log;
- 2 (6) calibration procedures and results, including
- 3 Pitot tube, nozzle, meter box, thermometer, and barometer
- 4 calibrations; and
- 5 (7) project participants and titles.
- 6 I. Any other special requirement of the test method,
- 7 test plan, compliance document, federal regulation, or Minnesota
- 8 rule or statute.

9 7017.2040 CERTIFICATION OF PERFORMANCE TEST RESULTS.

10 Subpart 1. **Certification required.** The test report shall

11 contain a certification by the responsible parties that the test

12 results have been reported accurately, that the field data is a

13 true representation of the sampling procedures, and that the

14 process data is a true indicator of the operating parameters of

15 the emissions unit at the time of the performance test. The

16 commissioner shall reject the results of a performance test if

17 the test report does not contain the certifications required by

18 subparts 2 to 5.

19 Subp. 2. **Certification of sampling procedures.** The team

20 leader of the personnel conducting the sampling procedures shall

21 certify that the data presented in the test report is true,

22 accurate, and complete. The following statement shall be signed

23 and dated by that person:

24 "I certify under penalty of law that the sampling

25 procedures were performed in accordance with the

26 approved test plan and that the data presented in this

27 test report are, to the best of my knowledge and

28 belief, true, accurate, and complete. All exceptions

29 are listed and explained below."

30 Subp. 3. **Certification of analytical procedures.** The

31 person responsible for the laboratory analysis of field samples

32 from a performance test shall certify that the data presented

33 for use in the test report is true, accurate, and complete. The

34 following statement shall be signed and dated by that person:

35 "I certify under penalty of law that the analytical

1 procedures were performed in accordance with the
2 requirements of the test methods and that the data
3 presented for use in the test report were, to the best
4 of my knowledge and belief, true, accurate, and
5 complete. All exceptions are listed and explained
6 below."

7 Subp. 4. Certification of test report by testing company.

8 The senior staff person at the testing company who is
9 responsible for compiling and checking the test report shall
10 certify that the information contained within the test report is
11 true, accurate, and complete. The following statement shall be
12 signed and dated by that person:

13 "I certify under penalty of law that this test report
14 and all attachments were prepared under my direction
15 or supervision in accordance with a system designed to
16 assure that qualified personnel properly gathered and
17 evaluated the test information submitted. Based on my
18 inquiry of the person or persons who performed
19 sampling and analysis relating to the performance
20 test, the information submitted in this test report
21 is, to the best of my knowledge and belief, true,
22 accurate, and complete. All exceptions are listed and
23 explained below."

24 Subp. 5. Certification of test report by owner or operator
25 of emission facility. The owner or operator of the emission
26 facility shall certify that the report accurately reflects the
27 operating conditions at the emission facility during the
28 performance test and that the required operational and
29 maintenance data for the month prior to the performance test has
30 been reported in a true, accurate, and complete manner. The
31 following statement shall be signed and dated by that person:

32 "I certify under penalty of law that the information
33 submitted in this test report accurately reflects the
34 operating conditions at the emission facility during
35 this performance test and describes the date and
36 nature of all operational and maintenance activities

1 that were performed on process and control equipment
2 during the month prior to the performance test. Based
3 on my inquiry of the person or persons who performed
4 the operational and maintenance activities, the
5 information submitted in this test report is, to the
6 best of my knowledge and belief, true, accurate, and
7 complete. All exceptions are listed and explained
8 below."

9 7017.2045 QUALITY ASSURANCE REQUIREMENTS.

10 Subpart 1. **Witnessing.** A performance test may be
11 witnessed by either the commissioner or an authorized employee
12 or agent of the commissioner or by EPA staff.

13 Subp. 2. **EPA audit samples.** The owner or operator of the
14 emission facility shall have the testing company conducting the
15 performance test analyze any EPA audit sample issued by EPA or
16 the commissioner in accordance with EPA protocol. If the audit
17 sample is a reusable sample that EPA requires to be returned,
18 the owner or operator of the emission facility shall return the
19 sample as directed by EPA, in good condition and within the time
20 allowed by EPA. The results of the audit shall be included in
21 the test report.

22 Subp. 3. **Quality assurance.** Any performance test shall
23 meet the minimum requirements for quality assurance, performance
24 standards, and specifications as stated in the reference method
25 or in the alternative or equivalent method. The provisions in
26 items A and B also apply.

27 A. All test runs for a given air pollutant shall be
28 completed within a single 24-hour period unless process
29 variables make this impractical or the method requires test runs
30 of three hours or greater, in which case the runs may be
31 conducted on consecutive days provided that the test is
32 conducted according to the provisions of the approved test plan
33 on each day.

34 B. Only employees of the testing company may operate
35 source sampling equipment or otherwise be a part of the sampling

1 or analysis of air pollutants from the emission facility during
2 a performance test. The owner or operator or employees of the
3 emission facility may not assist in any sampling or any analysis
4 of samples unless authorized within an approved test plan.

5 Any request to deviate from the requirements of this
6 subpart shall be submitted at least seven working days before
7 the performance test. The commissioner shall reject the results
8 of all test runs where deviations from quality assurance or
9 methodology or test plan requirements exceeded those allowed
10 under subpart 4.

11 Subp. 4. Deviation from quality assurance, test method, or
12 test plan. The commissioner shall reject the results of a
13 performance test if there was a deviation from the quality
14 assurance requirements of this part, from the test method, or
15 from the approved test plan unless:

16 A. the deviation was approved in writing by the
17 commissioner prior to the test;

18 B. the deviation was from the test method and did not
19 adversely affect the precision or scope of the test method under
20 the conditions of the performance test, and the test requirement
21 was not subject to federal regulation;

22 C. the deviation was from the test method and was
23 within the guidelines of that method and was necessitated by
24 field conditions; or

25 D. the deviation was from the operating conditions
26 required of the emissions unit and was within the range of
27 operating conditions allowed by the applicable compliance
28 document, federal regulation, or Minnesota rule or statute such
29 that the compliance status of the emission facility can be
30 determined under the test conditions. In this case, the
31 conditions of part 7017.2025 apply.

32 Subp. 5. Precision of test methods. The inherent
33 precision, level of confidence, and bias of any test method
34 approved by the commissioner for use during a performance test
35 shall not be a factor in determining the compliance status of an
36 emission facility. However, the commissioner shall reject any

1 test runs that were not conducted with acceptable accuracy
2 within the limits of the test method and the sampling conditions
3 or if the detection limit of the test method was higher than the
4 applicable emission standard.

5 If the commissioner determines that the test results are
6 valid under the quality assurance requirements of the method and
7 that the performance test was conducted in accordance with parts
8 ~~7017-2000~~ 7017.2001 to 7017.7060 and the applicable compliance
9 document, federal regulation, Minnesota rule or statute, and the
10 test result exceeds the applicable emission limit by any amount,
11 the owner or operator is in violation of that emission limit.

12 Subp. 6. Adjustments for detection limit. The
13 commissioner shall require that the sample volume to be
14 collected be increased above the minimum amount specified in a
15 compliance document, federal regulation, or Minnesota rule or
16 statute, if necessary to ensure that the amount or concentration
17 of the pollutant collected is greater than the detection limit
18 given by the analytical procedure employed upon the field
19 samples. If the commissioner requires this, the minimum sample
20 volume shall be determined by the following equation:

21
$$V = A \times \frac{100}{B} \times \frac{100}{C} \times \frac{1}{D}$$

22
23
24
25

26 Where: V = minimum sample volume to be collected (dscm)
27 A = the analytical detection limit in g
28 B = percent of the sample required per analytical run
29 C = sample recovery (%)
30 D = stack emission limit or expected emission
31 rate (g/dscm)

32 7017.2050 PERFORMANCE TEST METHODS.

33 Subpart 1. Test methods. Unless a different method is
34 given in an applicable compliance document, federal regulation,
35 or Minnesota rule or statute, the owner or operator of an
36 emission facility shall conduct performance tests using the
37 methods in Code of Federal Regulations, title 40, part 60,
38 appendix A; part 61, appendix B; and part 51, appendix M, and
39 following the requirements in part 7017.2060, unless an
40 alternative or equivalent method is approved or required by the
41 commissioner in accordance with subpart 2.

1 Subp. 2. **Alternative or equivalent test methods.** In lieu
2 of the test method described in subpart 1, the commissioner may,
3 if the performance test is not required for demonstration of
4 compliance with a federal regulation:

5 A. specify or approve minor changes that will not
6 adversely affect the precision or scope of the test method as
7 applied to the conditions of the performance test;

8 B. approve the use of an equivalent method; or

9 C. approve the use of an alternative method.

10 **7017.2060 PERFORMANCE TEST PROCEDURES.**

11 Subpart 1. **Applicability.** For the purpose of using the
12 methods referenced in part 7017.2050, the requirements in this
13 part apply unless otherwise stated in the applicable compliance
14 document, federal regulation, or Minnesota rule or statute.

15 Subp. 2. **Sample port location.** The sampling location, as
16 selected by Method 1, shall be the same for each pollutant
17 during a performance test.

18 Subp. 3. **Total particulate matter determination.**

19 A. For Method 5, the sampling time for each test run
20 shall be at least 60 minutes and the minimum sampling volume
21 will be 32 dscf (0.9 dscm).

22 B. For particulate matter determination where the
23 applicable emission limit includes organic condensibles, results
24 for particulate matter emissions shall include organic
25 condensible particulate matter emissions as determined by the
26 amendment to Method 5 given in part 7011.0725. The results
27 shall be reported as both total particulate matter including
28 organic condensibles and as particulate matter excluding organic
29 condensibles.

30 C. The determination of condensible particulate
31 matter may be waived if it can be demonstrated to the
32 commissioner through mass balance calculations or previous
33 performance test results that the emissions unit is not a source
34 of organic condensible particulate matter emissions.

35 Subp. 4. **PM-10 determination.**

1 A. For Method 201 or 201A, the sampling time for each
2 run shall be at least 60 minutes and the minimum sampling volume
3 will be 32 dscf (0.9 dscm).

4 B. Results for PM-10 emissions shall include
5 condensible particulate matter emissions as determined by Method
6 202. The results shall be reported as both total PM-10
7 including condensibles and as PM-10 excluding condensibles.

8 C. The compliance status of the emission facility
9 shall be based on the result for total PM-10 including
10 condensible particulate matter.

11 D. Condensibles may be determined, with approval of
12 the commissioner, by the procedure given in part 7011.0725 if
13 technical limitations make Method 202 impractical or if it can
14 be demonstrated to the commissioner through mass balance
15 calculations or previous performance test results that inorganic
16 condensibles account for less than five percent of the total
17 particulate matter.

18 E. The determination of condensible particulate
19 matter may be waived if it can be demonstrated to the
20 commissioner through mass balance calculations or previous
21 performance test results that the emissions unit is not a source
22 of condensible particulate matter emissions.

23 Subp. 5. **Opacity determination by Method 9.** Opacity
24 observations shall be performed by a certified observer ~~from a~~
25 ~~testing company~~ and in accordance with the requirements of
26 Method 9. In addition, the requirements of subpart 6 and the
27 following items shall apply:

28 A. The commissioner may reject the opacity results if
29 the commissioner cannot determine the compliance status of the
30 emission facility due to error, bias, or insufficient
31 documentation during the performance test. The quality
32 assurance recommendations of Method 9 and EPA document
33 EPA-600/4-77-027b, Addition Section 3.12 (Feb. 1984), as
34 amended, entitled "Quality Assurance Handbook for Air Pollution
35 Measurement Systems: Volume III. Stationary Source Specific
36 Methods," which is incorporated by reference, shall be the

1 criteria for acceptability of opacity results. This document is
2 available at the state law library and is not subject to
3 frequent change.

4 B. One series of readings is required for each
5 condition where opacity is required to be tested. Each test run
6 shall comprise 240 consecutive readings at 15-second intervals
7 and shall be obtained concurrently with a test run for
8 particulate matter, where applicable. Copies of the opacity
9 form showing all readings and required notation shall be
10 included in the performance test report.

11 C. The results of continuous monitoring by
12 transmissometer which indicate that the opacity at the time
13 visual observations were made was not in excess of the standard
14 are probative but not conclusive evidence of the actual opacity
15 of an emission, provided that the owner or operator shall meet
16 the burden of proving that the instrument used met, at the time
17 of the alleged violation, Performance Specification 1, had been
18 properly maintained and, at the time of the alleged violation,
19 calibrated, and that the resulting data have not been tampered
20 with in any way. The data shall be subject to the reduction
21 processes in subpart 6.

22 D. The opacity standards set forth in a regulation
23 shall apply at all times except during periods of start-up,
24 shutdown, malfunction, and as otherwise provided in the
25 applicable compliance document, federal regulation, or Minnesota
26 rule or statute.

27 E. Data reduction shall be performed in accordance
28 with the process in Paragraph 2.5 of Method 9. A violation of
29 the standard will be recorded if a six-minute average, which
30 means the arithmetic mean of any set of 24 consecutive
31 observations at 15-second intervals, exceeds the applicable
32 standard, unless the standard is contained in a Minnesota rule
33 or statute that allows an excursion above the standard for a
34 specified number of minutes within a specified time period and
35 the excursion opacity limit is not exceeded. A violation of the
36 standard will be expressed as the number of nonoverlapping

1 six-minute averages exceeding the standard within a one-hour
2 time period and the amount that each six-minute average exceeds
3 that standard.

4 Subp. 6. Additional opacity data reduction procedures.

5 The following items describe data reduction procedures that are
6 not included in Method 9. Item A applies only to reduction of
7 data from continuous emission monitoring systems. Item B
8 applies and shall be used for reduction of data for Method 9, an
9 equivalent or alternative method, or a continuous emission
10 monitoring system, when an applicable Minnesota rule or statute
11 allows an excursion above the opacity standard for a specified
12 number of minutes within a specified time.

13 A. For continuous emission monitoring systems,
14 compliance shall be determined on the basis of a six-minute
15 average. A six-minute average is the arithmetic mean of six
16 consecutive one-minute averages and a one-minute average is the
17 arithmetic mean of the number of readings required to be taken
18 in each minute. A violation of the standard shall be recorded
19 if any six-minute average exceeds the standard, unless item B is
20 applied and the applicable excursion opacity limit is not
21 exceeded. The violation shall be recorded as the number of
22 nonoverlapping six-minute averages exceeding the standard and
23 the amount by which each six-minute average exceeds the standard.

24 B. Excursion opacity limits apply only if an
25 exceedance of the standard is recorded when the applicable data
26 reduction process is used. In determining compliance with the
27 excursion limits, the data shall be reduced to one-minute
28 averages. A one-minute average is the arithmetic mean of the
29 number of readings required to be taken in one minute. Each
30 data point may be used only once in calculating the one-minute
31 averages but the data points used to determine exceedance of the
32 standard may be used in calculating one-minute averages.

33 (1) If only one excursion limitation is
34 specified, count the number of nonoverlapping one-minute
35 averages above the applicable standard. Compare the total
36 number of minutes above the opacity limit to the time allowed in

1 the excursion. A violation will be recorded if any one-minute
2 average is greater than the excursion opacity limit or if the
3 number of minutes above the standard exceeds the time allowed.

4 (2) If two excursions above a standard are
5 allowed, count, starting with the one-minute average with the
6 highest numerical value and continuing in descending order, the
7 number of nonoverlapping one-minute averages whose value exceeds
8 the lower excursion opacity limit. If this number of minutes is
9 less than the time period of the higher excursion limit, include
10 the highest of the one-minute averages that are below the lower
11 excursion opacity limit until the number of minutes counted is
12 equal to the time period of the higher excursion opacity limit.
13 Finally, count the number of remaining one-minute averages that
14 are above the opacity standard. A violation will be recorded if
15 any one-minute average is greater than the higher excursion
16 opacity limit, if the number of one-minute averages greater than
17 the lower excursion opacity limit exceeds the time period of the
18 higher excursion opacity limit or if the total number of
19 one-minute averages above the applicable standard exceeds the
20 total time period of the excursion opacity limits.

21 (3) Violation of an opacity standard with
22 excursion limits shall be expressed as the exceedance of the
23 opacity standard according to the applicable six-minute average
24 data reduction process plus the total number of nonoverlapping
25 minutes that are independent of the six-minute average and which
26 exceed the opacity excursion limit during a period of
27 consecutive readings in the applicable time period.

28 Subp. 7. Polychlorinated dibenzo-p-dioxins and
29 polychlorinated dibenzofurans determination. For Method 23,
30 each sample run shall be at least three hours in duration at an
31 average sampling rate of 0.5 dscf/minute or higher. The minimum
32 sample volume shall be 90 dscf. Longer test runs may be
33 required by the commissioner in order to collect a greater
34 sample volume if low resolution mass spectroscopy is to be used
35 for analysis of the field samples or as otherwise required by
36 part 7017.2045, subpart 6.

1 REPEALER. Minnesota Rules, part ~~7005.1860~~ 7017.2000, is
2 repealed.

3

4 RENUMBERER.--~~The part numbers in column A shall be renumbered as~~
5 ~~the part numbers in column B and internal references shall be~~
6 ~~corrected.~~

	A	B
7		
8		
9	7005.0116	7011.0120
10	7005.0370	7011.0535
11	7005.0500	7011.0725
12	7005.1130	7011.0115
13	7005.1400	7011.1625
14	7005.1410	7011.1630
15	7005.1500	7011.1725
16	7005.1850	7017.1000
17	7005.1876	7019.3010
18	7005.1950	7011.0825
19	7005.2040	7011.0920
20	7005.2160	7011.1430
21	7005.2230	7011.1815
22	7005.2200	7011.1915
23	7005.2330	7011.2015
24	7005.2400	7011.1325
25	7005.2590	7011.9945
26	7005.2680	7011.9954
27	7005.2790	7011.0620
28	7005.2920	7011.1135